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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/789,498	02/26/2004	Kouji Murakami	04121/LH	9099
1933	7590	08/24/2005	EXAMINER	
FRISHAUF, HOLTZ, GOODMAN & CHICK, PC 220 5TH AVE FL 16 NEW YORK, NY 10001-7708			GRANT, ROBERT J	
			ART UNIT	PAPER NUMBER
			2838	

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	Application No. 10/789,498	Applicant(s) MURAKAMI ET AL.	
	Examiner Robert Grant	Art Unit 2838	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 May 2005.  
 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1-7 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☒ The drawing(s) filed on 26 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \*    c) ☐ None of:  
         1. ☒ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                    | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1,3-4, and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamai in view of Toya et al. (5,654,622).

As to Claim 1, Tamai discloses an AC adapter for use in charging a secondary battery which is contained in or mounted on a main body, said AC adapter comprising (figure 9): a primary side circuit for turning (element 81), by using a switching element (element 85), an input DC voltage applied to a primary winding of a transformer on and off (Element 84); a secondary side circuit for rectifying and smoothing an AC voltage induced in a secondary winding of said transformer to produce an adapter voltage (Element 88); a voltage control circuit for detecting a variation of said adapter voltage to produce a voltage control signal (Element 96); a constant current control circuit for detecting a charging current flowing in said secondary side circuit to produce a constant current control signal (Element 97); a photocoupler for feeding said voltage control signal and said constant current control signal as a feedback signal back to said primary side circuit (Element 90); a switching control circuit for controlling, in response to said feedback signal, on and off of said switching element (Element 89); and detection means, disposed in said secondary side circuit, for detecting that said charging current

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decreases less than a set current value to produce a detected signal (Column 8, lines 48-52). Tamai does not expressly disclose whereby said voltage control circuit operates so as to repeatedly operations comprising the steps of gradually lowering said adapter voltage and of heightening, in response to said detected signal, said adapter voltage by a predetermined voltage. Toya discloses voltage control circuit operates so as to repeatedly operations comprising the steps of gradually lowering said adapter voltage and of heightening, in response to said detected signal, said adapter voltage by a predetermined voltage (Column 2, lines 48-62). It would have been obvious to a person having ordinary skill in the art at the time of this invention to use Toya's charging method with Tamai's circuit design for controlling charging of a battery in order to create a battery charger capable of rapid charging and battery protection.

As to claim 3, Tamai in view of Toya discloses all of the limitations of claim 1 which claim 3 is dependent upon. Toya further discloses wherein said predetermined voltage is equal to 100 millivolts (Column 8, lines 15-21).

As to Claim 4, Tamai in view of Toya discloses all the limitations of claim 1, which claim 4 is dependent upon, Tamai discloses wherein the charger further comprising a reference voltage generating circuit (element 98) for supplying a reference voltage to said voltage control circuit (Element 96), said voltage control circuit controlling said adapter voltage so as to change said adapter voltage by changing said reference voltage by said reference voltage generating circuit (element 82).

As to Claim 6, Tamai discloses a method of charging, by using an adapter voltage, a secondary battery which is contained in or mounted on a main body, said method comprising the steps of: a) gradually lowering said adapter voltage (Column 7, lines 61-64); Tamai does not expressly disclose b) heightening said adapter voltage by a predetermined voltage when a charging current flowing through said secondary battery is less than a set current value; and c) repeating said steps a) and b). Toya teaches heightening said adapter voltage by a predetermined voltage when a charging current flowing through said secondary battery is less than a set current value (Toya illustrates in figure 6, where in the V1 is the first level of charge, then it there is a drop off after after V1 is obtained, then it charges up to E, followed by another drop off, and it repeats until V2 is reached) charges up to ); and c) repeating said steps a) and b) (The steps of a and b are essentially repeated until the requirements of V2 are meet) (Column 2, lines 48-62). It would have been obvious to a person having ordinary skill in the art at the time of this invention to use Toya's charging method with Tamai's circuit design for controlling charging of a battery in order to create a battery charger with a rapid charge rate as well as battery protection.

As to claim 7, Tamai in view of Toya discloses all of the limitations of claim 6 which claim 7 is dependent upon. Toya further discloses wherein said predetermined voltage is equal to 100 millivolts (Column 8, lines 15-21).

3. Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamia in view of Toya in further view of Sato et al (US 6,246,890).

As to claim 2, Tamia in view of Toya discloses all the limitations of claim 1, which claim 2 is dependent upon. Tamia in view of Toya do not expressly disclose wherein said main body comprises a portable telephone set. Sato discloses wherein said main body comprises a portable telephone set (figure 1, Element 11). It would have been obvious to a person having ordinary skill in the art at the time of this invention to replace Sato's charger, which is inside a portable phone with Tamai in view of Toya's charger design in order to provide the portable phone with a charger that is more suited to control charging conditions.

As to claim 5, Tamia in view of Toya disclose all the limitations of claim 4, which claim 5 is dependent upon. Tamia in view of Toya do not expressly disclose wherein said main body comprises a portable telephone set. Sato discloses wherein said main body comprises a portable telephone set (figure 1, Element 11). It would have been obvious to a person having ordinary skill in the art at the time of this invention to replace Sato's charger, which is inside a portable phone with Tamai in view of Toya's charger design in order to provide the portable phone with a charger that is more suited to control charging conditions.

#### ***Response to Arguments***

4. Applicant's arguments filed 5-24-05 have been fully considered but they are not persuasive.

As to the applicant's argument, with regards to the rejection of claim 1, that Toya does not disclose gradually lowering the adapter voltage. It can be seen in Column 3,

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lines 58-60, that a protection circuit causes the interruption in the charging which causes the abrupt lowering. But it can be seen in Column 4, lines 8-17, that the protection circuit that Toya uses is configured not to cause an interruption in the charging of the battery, and therefore the adapter voltage will be gradually lowered.

As to the applicant's argument, with regards to the rejection of claim 6, that Tamai does not disclose gradually lowering said adapter voltage. As can be further read in the paragraph, specifically column 8, lines 1-8, the value gets reduced from E1 to E2, and as can also be seen from figure 27. Therefore, Tamai does teach gradually lower the adapter voltage.

As to the applicant's argument, with regards to the rejection of claim 6, that Toya does not teach heightening the adapter voltage by a predetermined voltage when the charging current flowing through said secondary battery is less than a set current value. The examiner points to figure 6, in order to show that the voltage and current of the battery are taken into account when charging. The examiner also directs the applicant to the response to the argument of claim 1.

### ***Conclusion***

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Grant whose telephone number is 571-272-2727. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on 571-272-2084. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RG



**Adolf Deneke Berhane**  
**Primary Examiner**